Abstracts

A Low-Noise L-Band Dielectric Resonator Stabilized Microstrip Oscillator

E.C. Niehenke and P.A. Green. "A Low-Noise L-Band Dielectric Resonator Stabilized Microstrip Oscillator." 1987 MTT-S International Microwave Symposium Digest 87.1 (1987 Vol. I [MWSYM]): 193-196.

Design and performance of a unique microstrip L-band bipolar transistor dielectric resonator stabilized oscillator (DRO) is described which achieves ultralow single-sideband phase noise (-163 dBc/Hz at 100 kHz offset frequency), low I/f noise corner frequency of 12 kHz, with near-constant frequency (1280 ± 0.06 MHz) and power (12.55 ± 0.15 dBm) over -50° to 75°C. Circuit details to minimize noise as well as transistor selection criteria and measurements are presented. Back-to-back varactors provide 350 kHz electronic tuning range for phase-locking applications without any increase of noise.

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